Impact of Dividend Announcements of Banks on Stock Returns and the Determinants of Dividend Policy

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Abstract

The study attempted to examine and compare the impact of dividend announcements on the stock returns of the public and private sector banking companies of the Indian share market and also examined the factors that determined the dividend policy of the banking companies using event study and panel data methodology, respectively. A sample of 38 companies listed on the BSE Bankex index of Bombay Stock Exchange (BSE), which made 172 dividend announcements for the period of 2011 - 2015, were considered. The study found that dividend announcements of public sector banks had a negative impact on stock returns, while the dividend announcements of private sector banks had a positive impact on stock returns. The examination of determinants of dividend policy revealed that in case of public sector banks, only size had a significant effect on the current year's dividend payout ratio, while in case of private sector banks, leverage, profitability, risk, and last year's dividend had a significant impact on the current year's dividend payout ratio.

Keywords : **dividend, stock markets, event study, leverage, risk**

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The most crucial decision for any firm is 'dividend declaration'. A firm should decide whether they should distribute their profits as dividend among its shareholders or to keep it as retained earnings. It is not that the firm should distribute its entire profit only as dividends or keep only as retained earnings. The quantum of profit to be retained with the firm and to be distributed among the shareholders depends upon dividend policy of the firm. The profits which are retained may be further reinvested for the financial growth of the firm ; whereas, the dividend distributed to the shareholders will help to boost their income. So, every firm needs to have balance between its decision with regards to dividends and retained earnings.

The quantum of dividend which is paid to the shareholders is decided by the board of directors of the company. Dividend can be paid in various forms like cash, stock, bond (script) dividend, property dividend (assets other than cash), etc. Companies declare the final dividend as well as the interim dividend. While some investors think that

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dividend will add surplus to their income, others opine dividends are not good for them as it will cost them in terms of higher tax payment, in turn reducing their wealth (Pandey, 2010). However, declaration of dividend depends upon the financial strength of a company, that is, a highly financially sound company may prefer to have higher dividend payout ratio ; whereas, it may be exactly opposite in the case of a financially weak company. This is because the financially weak company may prefer to retain their profits and further reinvest to improve financial soundness of a firm. Most of the companies have an opinion that declaring the dividend will be beneficial to them, that is, it will have a good impact on share prices as well as goodwill of the company.

Review of Literature

Dividend is an important part of firms' financing decision and has got much attention from various researchers to work on it. Many studies can be found examining the impact of dividend announcements of various companies on stock returns based on market capitalization, index, sectors, etc., but there are very few studies done with respect to the banking sector. Most of these studies found a significant impact of dividend announcements on stock returns.

Jose and George (2015) investigated dividend announcements of 12 banks listed on NSE Bank Nifty Index and BSE Bankex and revealed that there was a reaction of stock prices but only to the increase in dividend announcements. The authors also concluded that Indian stock markets were efficient. Ali and Chowdhury (2010) did not find any evidence relating to significant reaction of stock prices on the dividend announcement after studying stocks of 25 banks listed on Dhaka Stock Exchange as the banks keep their dividend decisions very confidential. Mukora (2014) found that the dividend announcements of five commercial banks listed on Nairobi Securities Exchange had a positive impact on stock returns and recommended that more firms should distribute dividends. According to Iqbal, Ahmad, Ullah, and Abbas (2014), dividends of three banks from Pakistan had a positive impact with the earnings per share and negative impact with the stock price as per the regression analysis. Jais, Karim, Funaoka, and Abidin (2009) revealed that dividend increase announcements had a positive impact ; whereas, dividend decrease announcements had a negative impact on the stock market. Further, it was also stated that investors supported a large magnitude of dividend increase and not the small one. Mehndiratta and Gupta (2010) with the help of event study methodology and Sharpe's market model concluded that the investors got significant positive value subsequent to the announcement day but received insignificant value prior to and on the day of announcement. Dharmarathne (2013) examined that the dividend announcements had a positive reaction on stock prices. Further, it estimated that announcements related to dividend increase supported the information content of the dividend hypothesis ; whereas, announcements related to dividend decrease did not show any information content.

Any company, while deciding about its dividend policy, should consider various factors. Banks also take into account such factors while taking their dividend decisions. A bulk of studies have been conducted to find out the various determinants of dividend policy with respect to banks. Kandpal and Kavidayal (2015) investigated the impact of dividend policy on shareholders' wealth by analyzing 15 public sector banks and 15 private sector banks listed on the Bombay Stock Exchange (BSE). The results of the study revealed that stock prices of the listed banks had a significant impact on dividend policy. Movalia and Vekariya (2014) studied 30 companies listed under S&P BSE Sensex and examined that most of the firms followed constant dividend payout policy and all the determinants of dividend policy like leverage, growth rate, earnings, and rate of return had a significant impact on dividend. Masum (2014) studied the impact of dividend policy on stock prices with respect to commercial banks listed on the Dhaka Stock Exchange. The study found that earnings per share, return on equity, and retention ratio had a significant positive impact on stock prices. It further concluded that dividend policy had a significant

positive effect on stock prices. According to Kashif, Muhammad, and Nishat (2013), size of the bank, earnings per share, last year's dividend payouts, capital ratio, and cash flow were the various factors affecting dividend payout decision of the banks listed on the Karachi Stock Exchange of Pakistan.

All the determinants had significant positive relationship with the current year dividend payout except cash flow, which showed negative relationship. It further concluded that banks in Pakistan followed a stable dividend policy and did not skip or cut the dividend payout ratio. Maladjian and El Khoury (2014) opined that firm's size, risk, and previous years' dividends had a significant positive impact on dividend payout ; whereas, opportunity, growth, and profitability had a significant negative impact. It was found that Lebanese listed banks mostly preferred to reinvest their profits rather than distributing dividends to the stakeholders. Zameer, Rasool, Iqbal, and Arshad (2013) investigated various determinants of dividend policy considering 27 foreign and domestic banks operating in Islamic and conventional banking in Pakistan. The study revealed that profitability, last year's dividend, and ownership structure had a positive impact, and liquidity had a negative impact on the dividend payout in the banking industry. Mehta (2012) revealed that UAE firms considered only size of the firm and profitability for dividend payout decisions. Rizvi and Khare (2011) studied a sample of banks from CNX Bankex Index and found that there was a significant positive association between earnings per share and dividend payout ratio. It further revealed that dividend payout ratio had an insignificant relationship with cash flow from operations, debt - equity ratio, and tax to profit before tax ratio.

Sudhahar (2010) analyzed the factors affecting the dividend policy decisions of the selected Indian companies and found that current year dividend payout ratio had a significant positive relationship with last year's dividend, current year profit after tax, and significant negative relationship with current year depreciation. Acharya, Biswasroy, and Mahapatra (2012) studied the factors determining dividend policy of Sensex included firms and disclosed that only earnings per share (EPS) and dividend per share (DPS) were significant with respect to the dividend payout ratio.

It is observed that there are a limited number of studies on the comparison of impact of dividend announcement on public and private sector banks. As such, the present paper tries to answer three main questions. First, is there any significant impact of dividend announcements on the share prices of the banking companies before and after the announcements? Second, whether there exists any difference of impact of dividend announcement on the share prices of public and private sector banks ? Third, the study examines the factors affecting the dividend payouts of public and private sector banks.

Data and Methodology

(1) Sources of Data and Data Collection : The dividend announcement dates were collected from the official website of *The Economic Times*. The stock prices of companies and index prices, that is, Bankex prices were collected from official website of Bombay Stock Exchange. The data relating to dividend rates and various determinants of dividend were collected from CMIE Prowess.

(2) Sampling Method, Sample Size, and Period of Study : BSE Bankex was considered as the sampling frame for the study as there are very less studies on this particular index. Bankex consists of 41 banks out of which 24 are public sector banks and 17 are private sector banks. As such, it was convenient for making a comparison between public and private sector banks. All banks were considered for the study except the three private sector banks : DCB, IDFC, and Standard Chartered PLC. DCB and Standard Chartered PLC have not declared dividend for several years ; whereas, no data is available for IDFC Bank as it was established recently in October 2015. Due to this fact, only 38 banks were considered for analyzing the objectives. The study was conducted for a period of 5 years commencing from 2011 to 2015.

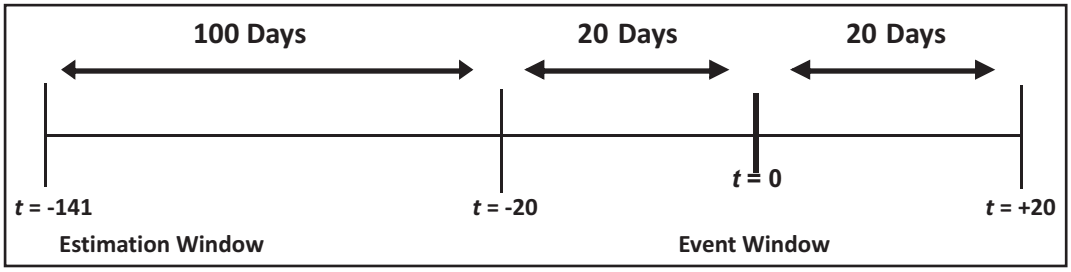
(3) Data Used : In order to know the impact of dividend announcement on stock returns, the three variables considered are : Final dividend announcements dates ; stock prices pre, post, and on announcement date ; and BSE Bankex (Index) prices.

The dividend rates of each announcement are used to find out whether there is any significant difference in the impact of dividend announcements between public and private sector banks.

In order to know the impact of various determinants on current year dividend payout ratio, the variables used are total assets, total liabilities, shareholders' equity, current assets, current liabilities, earnings per share, dividend per share, and price to earnings ratio.

Methodology

(1) Event study technique is used to investigate the impact of corporate events on stock prices or returns. Event study examines the difference between the expected returns if the analyzed event would not have taken place (normal returns) and the returns that were caused by that particular event (abnormal returns). The market model analytical technique has been used for estimating the abnormal returns and cumulative abnormal returns. It results in actual returns of the market and also the correlation between a firm's stock prices and the respective market.



(i) Market Model : The market model is explained as :

$$R_{it} = \alpha_i + \beta_i R_{mt} + \in_{it}$$

where,

R_{it} = the rate of return on bank i on day t,

R_{mt} = the rate of return on a market portfolio of stocks (BSE Bankex) on day t,

α_i = the intercept term (α),

β_i = the systematic risk of stock i (β) and,

$\in_{it}$ = the regression error term.

It was noticed that stocks of selected banks had not been traded on each and every trading day of the total period of 141 days, even though the exchange was in operation. Hence, the trading days of selected companies were less than that of the market. Therefore, the market trading days and the corresponding missing prices were adjusted with the closing prices of the previous days.

(ii) Calculation of Normal Returns : Firstly, before running the market model, the daily actual returns for the sample of companies and for the market were calculated using the following formulas :

Stock Returns

$$R_{it} = (P_{it} - P_{it-1})/P_{it-1}$$

where,
R_{it} = Rate of return of bank *'i'* on day *'t'*,
P_{it} = Closing price of the stock *'i'* on day *'t'* (current date),
P_{it-1} = Closing price of the stock on day $t - 1$ (previous trading date).

Market Returns

$$R_{mt} = (BKP_{it} - BKP_{it-1})/BKP_{it-1}$$

where,
R_{mt} = Rate of return on market index (Bankex) on day *'t'*,
BKP_{it} = Closing price of Bankex *'i'* on day *'t'* (current date),
BKP_{it-1} = Closing price of Bankex on day $t - 1$ (previous trading date).

(iii) Calculation of Expected Returns : Expected returns of the banks are calculated using the following equation :

$$E(R)_{it} = \alpha_i + \beta_i + R_{mt}$$

where,
$E(R_{it})$ = Expected returns on bank *'i'* on day *'t'* in the event period,
α = estimated regression intercept (α) of stock *'i'*,
β = the estimated systematic risk (β) of stock *'i'*.

(iv) Calculation of Abnormal Returns : Then, the abnormal returns are calculated for the event period using the following formula :

$$AR_{it} = R_{it} - E(R_{it})$$

where,
AR_{it} = Abnormal returns of the bank *'i'* during the event period,
R_{it} = Rate of returns of bank *'i'* on day *'t'* in the event period,
$E(R_{it})$ = Expected return on bank *'i'* on day *'t'* in the event period.

(v) Calculation of Average Abnormal Returns (AARs) : The ARs for each day for each event are summed up and averaged to obtain the AAR for both the samples as follows :

$$AAA_t = \frac{1}{N} \sum_{i=1}^{n} AR_{it}$$

where,
AAR_t = Average abnormal return for day t,
N = Number of events in the sample.

(vi) Calculation of Cumulative Average Abnormal Returns (CAARs) : Sometimes, there is leakage of information prior to the announcement of dividends ; the stock prices might increase before the announcement of an event date.

In such a case, the abnormal return on the event day will not be a powerful indicator. Therefore, the better indicator would be the cumulative abnormal returns, which is the sum of all abnormal returns over the event period. Thus, the cumulative abnormal returns capture the total abnormal returns for the whole window period. Cumulative average abnormal returns are calculated using the following formula and it is used to measure the impact that the dividends have on share prices of banks :

$$CAAR_t = \sum_{i=1}^{n} AAR_t$$

where,
$CAAR_t$ = Cumulative average abnormal returns up to day *t,*
AAR_t = Average abnormal return on day *t*.

(vii) Significance Testing (Parametric Test) for AAR_t : To ascertain the significance of the average abnormal returns for each day in the event window, testing is done with *t* - statistics computed for each average abnormal return (AAR_t) using the equation below :

$$t_{AAR} = \frac{AAR_t}{\sigma(AAR_t)/\sqrt{n}}$$

where,
AAR_t = Average abnormal return for time *'t'*,
$\sigma\ (AAR_t)$ = Standard deviation of average abnormal returns at time *'t'*,
n = Number of events in the sample.

(viii) Significance Testing (Parametric Test) for $CAAR_t$: The significance of the cumulative average abnormal returns was ascertained via the calculation of *t* - statistics, stated as follows:

$$t_{CAAR} = \frac{CAAR_t}{\sigma(CAAR_t)/\sqrt{n}}$$

$CAAR_t$ = Cumulative average abnormal return for time *'t',*
$\sigma\ (CAAR_t)$ = Standard deviation of cumulative average abnormal returns at time *'t'*,
n = Number of events in the sample.

(2) Technique Used for Finding the Difference in the Impact of Dividend Announcements Between Public and Private Sector Banks

t - Test : In order to find out the difference in the impact of dividend announcements between public and private sector banks, *t* - test is used.

The null and alternate hypotheses are :

H0: $\mu_1 = \mu_2$

H1: $\mu_1 \neq \mu_2$ (two tail)

The model presented below generates the *t* - statistic:

$$t = \frac{(\bar{x}_1 - \bar{x}_2)}{\sqrt{s^2_e \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \approx t\,(n_1 + n_2 - 2)\ d.f$$

(3) Technique Used for Determining the Factors Affecting the Dividend Payout Ratio of Banking Companies :

↳ **Panel Data Technique :** The data collected in this study's sample in order to study the various determinants is of both time-series and cross-sectional character, where the time-series data refers to the time perspective of the data, which in the case of this study is a 5-year sample period, and the cross-section data refers to the width of the data, which in this case are the 38 banks included. Therefore, pooled data will be employed, combining both types of data and both the time-series and cross-sectional dimensions. A general model, presented below, explains the features of a multiple regression of a pooled sample. The '*i*' indicates the particular observation and '*t*' indicates the period (the year) :

$$CYD_{it} = \alpha + \beta_1 SZ_{it} + \beta_2 LEV_{it} + \beta_3 LIQ_{it} + \beta_4 PRF_{it} + \beta_5 RSK_{it} + \beta_6 LYD_{it} + \varepsilon_{it}$$

Panel data is a special type of pooled data and in order to avoid some of the disadvantages associated with pooled data analysis, the pooled data regressions employed in this study will be estimated using panel analysis. The panel data analysis is based on sample data over the whole sample period of 5 years. The analysis combines times-series and cross-sectional observations, providing results are regressed on 190 observations.

The Table 1 shows the description of the variables used for the purpose of the study :

Table 1. Description of Variables Used for the Study

Variables	Symbol	Description
Current Year Dividend Payout Ratio	*CYD*	Current Year Dividend per Share / Current Year Earnings per Share
Firm Size	*SZ*	Total Assets
Leverage	*LEV*	Debt-to-equity ratio = Total Liabilities / Shareholders Equity
Liquidity	*LIQ*	Current Ratio = Current Assets / Current Liabilities
Profitability	*PRF*	Earnings per Share (EPS)
Risk	*RSK*	Price to Earnings Ratio (P/E)
Last Year's Dividend Payout Ratio	*LYD*	Last Year's Dividend per Share / Last Year's Earnings per Share

The following hypotheses are tested for the study :

↳ **H_{01}:** There is no significant impact of dividend announcement on stock returns of public and private sector banks before and after the dividend announcement dates.

↳ **H_{02}:** There is no significant difference in the impact of dividend announcements between public and private sector banks.

↳ **H_{03}:** There is no significant effect of various determinants on current year dividend payout ratio of public and private sector banks.

Empirical Analysis and Results

(1) Testing the Impact of Dividend Announcements on Stock Returns of Public and Private Sector Banks Before and After the Dividend Announcement Dates : The Figure 1 reveals that AAR on the announcement day is 0.00, which is statistically insignificant at the 5% and 10% levels of significance. So, this provides evidence that the dividend announcement information does not show any immediate effect on stock returns. AAR of days from -20 to -18 and -16 has a positive impact on stock returns and is significant at 5% and 10% levels of significance ; whereas, from -15 to -6 days and -4 to -2 days, AAR has a significant negative impact as it starts falling from -19 and continues till -13 where it is even less than the AER. Later on, it shows an increasing trend after -13, but still it continues to be below zero. In the pre-announcement period, only on the day -3, it is above zero. CAAR starts increasing and is much higher prior to announcements, and it also shows a significant positive impact from -20 to -10 days. This reveals that the market reacts much prior to the dividend announcement day. Hence, it can be said that there is a leak of information about the announcement of final dividends. CAAR on the announcement day shows a significant negative impact of dividend announcements. It is important to note that AAR and CAAR are statistically significant post the announcement day. AAR is statistically positively significant from day +5 to day +14 and on days +16, +18, and +19, with the exception on day +8, it is negatively significant. Dividend

Figure 1. Average Returns Over a Window Period of 41 Days of the Public Sector Banks

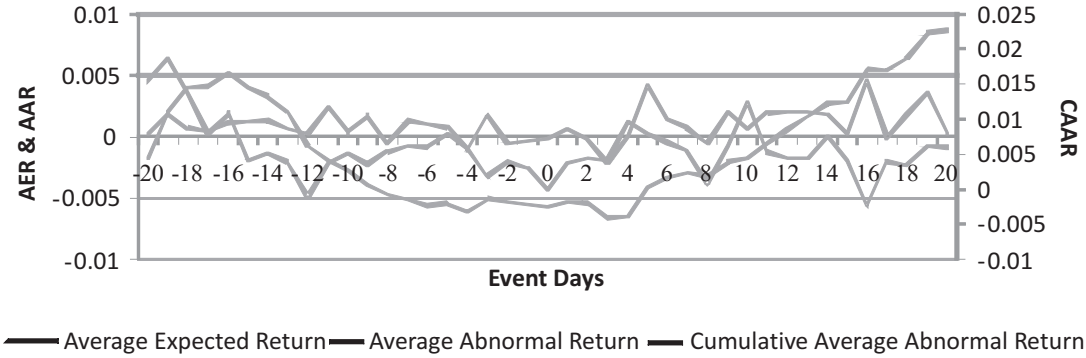
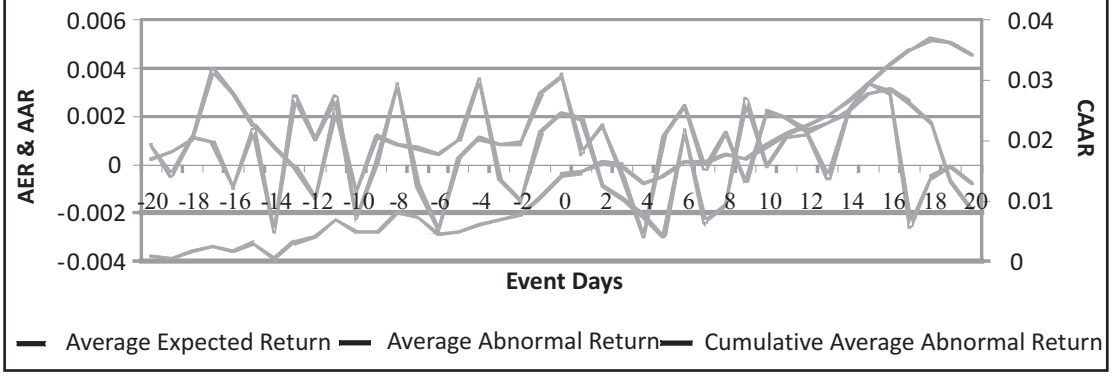


Figure 2. Average Returns Over a Window Period of 41 Days of the Private Sector Banks



announcements have no impact on CAAR on day +5 ; whereas from day +1 to day + 4, these have significant negative impact ; and from day +6 to day +20, they have a significant positive impact on CAAR. AAR shows a positive impact on day +1 and negative impact on day +3. This indicates that the market does react after the announcement day.

From the Figure 2, it can be said that AER and AAR are fluctuating greatly throughout the entire window period. The CAAR prior to announcement is less than 0, but after the announcement, it shows an increasing trend. AAR and CAAR are statistically positively significant at 5% and 10% levels of significance on the day of dividend announcement. So, it indicates that there is a quick response to dividend announcements on 0- day and reveals that there is an informational content about the dividend announcements. AAR shows a significant positive impact on days -20,-18,-17,-15, -13 to -11, -8, and -4 to -1 ; whereas, it shows a significant negative impact for the remaining days prior to the announcement except on day -9 and day -5, where there is no impact of the said event. The dividend announcement has a significant negative impact on AAR on days +3, +4, +9, +19, and +20 and a significant positive impact for the rest of the days. AAR does not show any impact of the event on the day +7. CAAR, on the other hand, is statistically positively significant during the event window except on the days -20 to -16 and -15, where it is insignificant, showing no impact of dividend announcement on these days.

The Table 2 depicts 102 dividend announcements of public sector banks from the Bankex index of Bombay Stock Exchange (BSE). It shows a significant positive or negative impact prior to, later than, and on the day of the

Table 2. Impact of Dividend Announcements on Public Sector Banks

			Impact				
S. No.	Bank Name	Dividend	Before Announcement Day		Announcement Day	After Announcement Day	
		Announcement Date	CAR	No. of Days	CAR	CAR	No. of Days
1	**Allahabad Bank**	May-11	Negative	13	Negative	Negative	20
		May-12	Negative	11	Negative	Negative	20
		May-13	Negative	14	Negative	Negative	20
		May-15	Positive	14	Positive	Positive	20
2	**Andhra Bank**	May-11	Negative	12	Negative	Nil	0
		May-12	Negative	4	Nil	Negative	18
		May-13	11N 3P	14	Negative	Negative	20
		Apr-15	Positive	4	Nil	Positive	1
3	**Bank of Baroda**	Apr-11	Positive	8	Nil	Negative	12
		May-12	Negative	6	Negative	Negative	20
		May-13	Negative	14	Negative	Negative	19
		May-14	4P 1N	5	Nil	2P 12N	14
		May-15	Positive	9	Positive	Positive	20
4	**Bank of India**	May-11	Nil	0	Negative	Negative	14
		Apr-12	Negative	7	Negative	Negative	16
		May-13	Negative	14	Negative	Negative	20
		May-15	Negative	1	Negative	Negative	19
5	**Canara Bank**	May-11	Positive	5	Nil	Negative	5
		May-12	2N 2P	4	Positive	Positive	2
		May-13	7P 1N	8	Negative	Negative	13

		May-14	Positive	17	Positive	Positive	17
		May-15	Negative	12	Negative	Negative	20
6	**Central Bank of India**	May-11	Nil	0	Nil	Nil	0
		May-12	Negative	1	Negative	Negative	20
		May-13	Negative	19	Negative	Negative	20
		May-15	Negative	9	Negative	Negative	20
7	**Corporation Bank**	Apr-11	Positive	20	Positive	Positive	20
		May-12	Negative	14	Negative	Positive	3
		May-13	Negative	13	Negative	Negative	5
		May-14	Positive	11	Negative	1N 16P	20
		May-15	Nil	0	Positive	Positive	16
8	**Dena Bank**	Apr-11	Positive	12	Positive	Positive	3
		May-12	Positive	7	Nil	Positive	3
		May-13	Negative	17	Negative	Negative	20
		May-14	1N 3P	6	Negative	1N 17P	20
		May-15	Negative	14	Nil	Negative	19
9	**IDBI Bank**	Apr-11	Nil	0	Positive	Positive	2
		Apr-12	Nil	0	Nil	Negative	11
		Apr-13	4P 4N	8	Negative	Negative	17
		Apr-14	Positive	20	Positive	Positive	20
		May-15	Negative	14	Negative	Negative	20
10	**Indian Bank**	Apr-11	Positive	6	Positive	Positive	20
		May-12	Negative	16	Negative	Negative	20
		May-13	Negative	16	Negative	Negative	20
		May-14	Positive	16	Negative	1N 19P	20
		May-15	Negative	11	Nil	2P 3N	5
11	**Indian Overseas Bank**	May-11	Positive	11	Positive	Positive	20
		May-12	Negative	8	Negative	Negative	19
		Apr-13	Negative	11	Negative	Negative	20
		Apr-14	Positive	19	Positive	Positive	20
12	**Bank of Maharashtra**	Apr-11	Positive	16	Positive	Positive	20
		May-12	Negative	3	Nil	Negative	12
		Apr-13	Positive	7	Positive	Positive	20
		May-15	Negative	14	Nil	Positive	12
13	**Oriental Bank of Commerce**	Apr-11	Negative	2	Negative	9N 4P	14
		Apr-12	Positive	13	Nil	Positive	11
		May-13	1P 2N	2	Negative	Negative	20
		Apr-14	Positive	19	Positive	Positive	20
		May-15	Positive	7	Positive	Positive	11
14	**Punjab & Sind Bank**	May-12	Negative	1	Negative	Negative	20
		May-13	Positive	5	Nil	Negative	10
		May-14	Positive	17	Nil	Positive	19

		May-15	Positive	20	Positive	Positive	19
15	**Punjab National Bank**	May-11	Negative	10	Negative	Negative	20
		May-12	Negative	9	Negative	Negative	20
		May-13	Negative	16	Negative	Negative	19
		May-15	Positive	12	Positive	Positive	20
16	**State Bank of Bikaner and Jaipur**	Apr-11	Nil	0	Nil	Positive	16
17	**State Bank of India**	May-11	Positive	6	Nil	1P 17N	20
		May-12	Negative	10	Negative	Negative	8
		May-13	Positive	4	Nil	Negative	14
		May-14	Positive	17	Positive	Positive	20
		May-15	8N 2P	10	Nil	Negative	10
18	**State Bank of Mysore**	Apr-11	Positive	4	Positive	Positive	20
		Apr-15	Negative	3	Positive	Positive	5
19	**State Bank of Travancore**	Apr-11	Nil	0	Nil	Positive	20
		Apr-12	Negative	15	Negative	Negative	20
		Apr-13	Nil	0	Nil	Negative	14
		May-15	Nil	0	Positive	Positive	1
20	**Syndicate Bank**	May-11	Nil	0	Positive	Positive	20
		May-12	Negative	7	Negative	Negative	20
		May-13	6P 5N	7	Positive	Positive	12
		May-14	Positive	17	Positive	Positive	17
		May-15	Positive	12	Positive	Positive	20
21	**UCO Bank**	Apr-11	Positive	15	Nil	Positive	2
		May-12	3P 4N	7	Negative	Negative	20
		May-13	Positive	10	Positive	Positive	20
		May-14	Positive	8	Positive	Positive	20
		May-15	Positive	5	Nil	Positive	9
22	**Union Bank of India**	May-11	Negative	13	Negative	Negative	4
		May-12	Negative	18	Negative	Negative	20
		May-13	Negative	18	Negative	Negative	20
		May-14	Positive	11	Negative	3N 17P	20
		May-15	5P 3N	8	Nil	Positive	20
23	**United Bank of India**	Apr-11	Positive	7	Positive	Positive	1
		May-12	Negative	11	Negative	Negative	20
		May-13	Negative	5	Negative	Negative	20
24	**Vijaya Bank**	Apr-11	Positive	16	Positive	Positive	20
		Apr-12	Positive	10	Positive	Positive	19
		Apr-13	5P 1N	6	Nil	Negative	8
		May-14	Positive	12	Positive	Positive	18
		May-15	Negative	1	Nil	Nil	0

Note. *P - Positive and N - Negative

announcement. In rare cases, the announcements have no impact on stock returns. Overall, we see that most of the public sector banks have more of significant negative impact on the returns as compared to positive impact during the post announcement period and so as in the case of the pre - announcement period. Out of the total 102 announcements, 32 announcements have a significant positive impact, 43 announcements have a significant negative impact, and 27 announcements have no impact on the stock returns on the announcement day.

The Table 3 represents 65 dividend announcements of private sector banks from the Bankex index of Bombay Stock Exchange (BSE). It shows a significant positive or negative impact prior to, later than, and on the day of the announcement. In rare cases, the announcements have no impact on stock returns. Overall, we can infer that most of the private sector banks have more of significant positive impact on the returns as compared to negative impact during the post announcement period and so as in the case of the pre-announcement period. This negative impact during the post announcement period is due to decrease in dividend rates. On the announcement day, out of total 65 announcements, 27 announcements have a significant positive impact, 19 announcements have a significant

Table 3. Impact of Dividend Announcements on Private Sector Banks

			Impact				
S. No.	**Bank Name**	**Dividend**	**Before Announcement Day**		**Announcement Day**	**After Announcement Day**	
		Announcement Date	**CAR**	**No. of Days**	**CAR**	**CAR**	**No. of Days**
1	**Axis Bank Ltd.**	Apr-11	Nil	0	Nil	Negative	20
		Apr-12	Negative	3	Negative	Negative	18
		Apr-13	Negative	11	Nil	1P 1N	2
		Apr-14	Nil	0	Nil	1N 3P	4
		Apr-15	Negative	15	Negative	Negative	20
2	**City Union Bank Ltd.**	May-11	Positive	4	Positive	Positive	20
		May-12	Positive	7	Nil	Positive	6
		May-14	Positive	14	Positive	Positive	20
		May-15	1N 8P	9	Positive	Positive	20
3	**Dhanlaxmi Bank Ltd.**	Apr-11	Positive	16	Positive	Positive	20
4	**Federal Bank Ltd.**	May-11	Positive	13	Nil	Positive	20
		May-12	Negative	3	Positive	Positive	3
		Apr-13	Negative	14	Negative	Negative	20
		Apr-14	Nil	0	Nil	6N 8P	14
		Apr-15	Negative	15	Nil	Positive	11
5	**HDFC Bank Ltd.**	Apr-11	Positive	3	Nil	Positive	3
		Apr-12	Positive	15	Positive	Positive	20
		Apr-13	3N 5P	8	Positive	Positive	17
		Apr-14	Negative	14	Negative	Negative	20
		Apr-15	Negative	16	Negative	Negative	20
6	**ICICI Bank Ltd.**	Apr-11	Negative	16	Nil	Positive	6
		Apr-12	Negative	12	Nil	Positive	14
		Apr-13	Negative	7	Negative	Negative	17
		Apr-14	Negative	16	Negative	Negative	20

		Apr-15	Positive	4	Positive	Positive	20
7	**IndusInd Bank Ltd.**	Apr-11	Positive	1	Nil	Negative	2
		Apr-12	Positive	14	Positive	Positive	20
		Apr-13	2P 5N	7	Nil	Positive	17
		Apr-14	Positive	5	Nil	Negative	15
		Apr-15	Positive	9	Positive	Negative	19
8	**Jammu & Kashmir Bank Ltd.**	May-11	Negative	18	Negative	Negative	12
		May-12	Negative	5	Negative	Negative	6
		May-13	Positive	12	Positive	1N 6P	7
		May-14	Negative	8	Negative	Negative	20
		May-15	Positive	7	Positive	Positive	20
9	**Karnataka Bank Ltd.**	May-11	Positive	3	Positive	Positive	20
		May-12	Negative	5	Negative	Negative	18
		May-13	Negative	11	Negative	Negative	16
		May-14	3N 1P	4	Negative	Positive	3
		May-15	Nil	0	Positive	Positive	20
10	**KarurVysya Bank Ltd.**	May-11	Positive	7	Positive	Positive	19
		May-12	Nil	0	Nil	Positive	18
		May-13	Positive	6	Nil	Nil	0
		May-14	6N 6P	13	Positive	Positive	20
		Apr-15	Negative	15	Negative	Negative	20
11	**Kotak Mahindra Bank Ltd.**	May-11	Negative	6	Nil	5N 1P	6
		May-12	Positive	19	Positive	Positive	20
		May-13	9N 1P	10	Positive	Positive	20
		Apr-14	1N 6P	7	Positive	12P 3N	15
		May-15	Positive	10	Positive	Nil	0
12	**Lakshmi Vilas Bank Ltd.**	May-11	Nil	0	Positive	Positive	20
		May-12	Positive	11	Positive	Positive	13
		May-13	Nil	0	Negative	Negative	18
		May-14	Positive	8	Positive	Positive	20
		Apr-15	Negative	6	Nil	Negative	12
13	**South Indian Bank Ltd.**	May-11	Positive	19	Positive	Positive	20
		May-12	Nil	0	Nil	Negative	12
		May-13	Negative	19	Negative	Negative	20
		Apr-14	2n 9p	9	Positive	Positive	7
		May-15	Negative	1	Negative	Nil	0
14	**YES Bank Ltd.**	Apr-11	Positive	12	Positive	Positive	20
		Apr-12	Negative	9	Nil	Negative	20
		Apr-13	Negative	20	Negative	Negative	20
		Apr-14	Positive	17	Positive	Positive	20
		Apr-15	Negative	3	Negative	Positive	1

Note. *P - Positive and N - Negative

negative impact, and 19 announcements have no impact on stock returns. So we reject H_{01} and can infer that there is a significant impact of dividend announcements on stock returns of public and private sector banks before and after the dividend announcement dates.

(2) Testing the Significant Differences in the Impact of Dividend Announcements Between Public and Private Sector Banks : After determining the impact of dividend announcements on stock returns of public and private sector banks, it is important to know whether there is any difference in the impact of dividend announcements between public and private sector banks. So, in order to accomplish this, *t* - test has been used.

It is evident from the Table 4 that cumulative average abnormal returns given through the mean value of the private sector banks is greater than that of the public sector banks. Further, H_{02} of no significant difference in the impact of dividend announcements between public and private sector banks is rejected at the 5% significance level. This indicates that the private sector banks have higher dividend payout ratio comparatively and also have a significant impact on the stock returns as compared to the public sector banks.

Table 4. *t*-Test : Two-Sample Assuming Equal Variances

	Public CAAR	Private CAAR
Mean	0.006025073	0.013752575
Variance	6.29316E-05	0.000121955
Observations	41	41
Df	80	
***t* Stat**	-3.638965093	
***P* (*T*< = *t*) two-tail**	0.000483456	
***t* Critical two-tail**	1.990063421	

(3) Determinants of Dividend Payout Ratio : There are numerous factors which determine the banks' dividend policy and a quantum of change in these factors may have a positive or negative impact on the banks. The present study employs panel data techniques in order to find out the impact of firm size, leverage, liquidity, profitability, risk, and last year's dividend payout (independent variables) on the current year's dividend payout ratio (dependent variable) of public and private sector banks.

As per the results given in Table 5, pooled OLS is selected as the appropriate model as the null hypothesis of OLS being appropriate of *F* - Test and Breusch - Pagan test is not rejected. Therefore, it is evident that in case of public sector banks, it is only size which has a positive impact on the current year dividend payout ratio which is significant at the 5%. This indicates that public sector banks, which have larger firm size and net worth, pay higher dividends as compared to those banks having low firm size. Also, the banks with larger firm size usually have high capital ; so, they can spend higher amount on payment of dividends.

As per the results shown in Table 6, pooled OLS is appropriate in case of factors affecting dividend policy of private sector banks. The results of pooled OLS reveal that profitability, risk, and last year's dividend are significant and have a negative impact on the current year's dividend payout ratio ; whereas, leverage has a positive impact. This indicates that the private sector banks use debt to pay dividends to shareholders. It is observed that profitability has a significant and negative effect on dividend policy. This shows that firms, even though they make profits, pay fewer dividends. This result rejects the life cycle theory which suggests that firms with more profits pay more dividends. This also indicates that firms prefer to retain earnings in order to finance future investments and growth opportunities. The results show that risk has a negative effect on dividend payout

ratio. It reveals that risky firms, which have high volatility in their cash flows, find it difficult to plan for future investments which will enlarge their needs for financing from external sources, thus leading to a lower dividend payout ratio. A negatively significant last year's dividend payout ratio may indicate that private banks give more

Table 5. Panel Data Analysis of Public Sector Banks

	Pooled OLS	FEM	REM
Const	0.156792	0.143904	0.155286
	(1.9094)***	(-1.6254)	(1.8896) ***
Size	1.25E-08	6.38E-09	1.17E-08
	(1.7135)***	(-0.8317)	(-1.6183)
Leverage	-2.43E-05	1.03E-05	-1.98E-05
	(-0.4458)	(-0.1815)	(-0.3667)
Liquidity	-0.0102356	-0.00634219	-0.00979731
	(-0.6246)	(-0.3547)	(-0.5998)
Profitability	-0.000204098	-0.000629559	-0.00025909
	(-0.00723104)	(-0.7941)	(-0.3481)
Risk	0.00723104	0.0083217	0.00736247
	(-1.2456)	(-1.3358)	(-1.2745)
Last Year Dividend Payout	-0.0680241	-0.0639571	-0.0670746
	(-0.4846)	(-0.4199)	(-0.4795)
***R* - Squared**	0.07	0.29	
		Panel Data Model Selection	
Test	**Test Null Hypothesis**	**Test Statistics**	**Remarks**
***F* - Test**	OLS is appropriate	1.18 (0.27)	Do not reject null hypothesis.
Breusch - Pagan Test	OLS is appropriate	0.22 (0.63)	Do not reject null hypothesis.
Hausman Test	REM is appropriate	7.18 (0.30)	Do not reject null hypothesis.

Note. *** significant at 1% ; ** significant at 5% ; * significant at 10%.

Table 6. Panel Data Analysis of Private Sector Banks

	Pooled OLS	FEM	REM
Const	0.376703	0.398992	0.376703
	(1.8072)*	(-1.7791)*	(1.8072)*
Size	-3.06E-08	-5.72E-08	-3.06E-08
	(-1.0699)	(-1.7713)*	(-1.0699)
Leverage	0.00110086	0.00132122	0.00110086
	(-5.8678)***	(-5.5799)***	(-5.8678)***
Liquidity	-0.0383029	-0.0694586	-0.0383029
	(-0.8241)	(-1.2990)	(-0.8241)
Profitability	-0.00708679	-0.00709915	-0.00708679
	(-4.8266)***	(-4.3996)***	(-4.8266)***

Risk	-0.00873962	-0.00772196	-0.00873962
	(-1.9070)*	(-1.5922)	(-1.9070)*
Last Year's Dividend Payout	-0.363518	-0.421447	-0.363518
	(-3.3301)***	(-3.1477)***	(-3.3301)***
***R* - Squared**	0.380515	0.506776	
	Panel Data Model Selection		
Test	**Test Null Hypothesis**	**Test Statistics**	**Remarks**
***F* - Test**	OLS is appropriate	0.98(0.47)	Do not reject null hypothesis.
Breusch - Pagan Test	OLS is appropriate	0.11(0.73)	Do not reject null hypothesis.
Hausman Test	REM is appropriate	10.19(0.11)	Do not reject null hypothesis.

Note. *** significant at 1%; ** significant at 5% ; * significant at 10%.

importance to retained earnings for future growth. Therefore, we reject the hypothesis H_{03} and can infer that there is a significant effect of various determinants on current year's dividend payout ratio of public and private sector banks.

Conclusion

The results show that majority of the dividend announcements of public sector banks show a negative impact on stock returns, and dividend announcements of private sector banks show a positive impact on stock returns. This may be due to the fact that investors respond positively to the dividend announcements of private sector banks. Comparatively, the dividend payout ratio is higher for private sector banks. Further, investors believe that private sector banks show more growth prospects than the public sector banks. Also, there is a significant difference in the impact of dividend announcements between public and private sector banks. The results of panel data reveal that in both cases, that is, public sector banks and private sector banks, pooled OLS is found to be appropriate. In case of public sector banks, only size has a significant effect on the current year's dividend payout ratio. Leverage, profitability, risk, and last year's dividend have a significant impact on the current year's dividend payout ratio for private sector banks.

Research Implications

In this study, a novel attempt has been made by comparing the impact of dividend announcements on stock returns of private and public sector banks in India. In this regard, the study would help the banking companies to design their dividend policy based on the sentiments and responses of the markets. It is necessary that the banking companies, especially public sector banks, should pay more attention on increasing the wealth of the shareholders and firm value through their dividend policies.

Limitations of the Study and Scope for Further Research

The scope of the study is limited to only a certain time period from 2011 to 2015. The banking companies considered as sample are only those that are listed on the Bombay Stock Exchange. The study can be extended by considering a large number of other variables like financial efficiency, safety, firm value, dividend yield, etc. in

order to assess the various factors determining the dividend policies of banking companies. The study can be conducted for those banks which are listed on National Stock Exchange for a larger time period than taken by the present study.

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